

# OPERATION AND PARTS MANUAL



**GLOBUG**  
**MODEL GB4000**  
**LIGHT TOWER MOUNT TYPE**  
**BALLOON LIGHT**  
***SERIAL NO. G3100044 AND ABOVE***

Revision #1 (02/25/14)



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**THIS MANUAL MUST ACCOMPANY THE EQUIPMENT AT ALL TIMES.**

[illegible]

# Certificate



Certificate no.

CA 72140295 01

**License Holder:**

LIGHT BOY CO., LTD.  
2-6-14 Kurigi, Asao  
KAWASAKI, KANAGAWA 215-0033  
JAPAN

**Manufacturing Plant:**

F-Tec Corp  
2-6-14 Kurigi, Asao  
KAWASAKI, KANAGAWA 215-0033  
JAPAN

Test report no.: USA-SS 17036833 001

Client Reference: Satomi Kugimiya

Tested to: CAN/CSA-C22.2 No. 9.0-96 (R2011)

Certified Product: Portable HID luminaire, Globug Series

License Fee - Units

Model Designation: 1) GB2000, 2) GB4000

7

Rated Voltage: AC 120V, 60Hz

Rated Power: 1) 2000W 2) 4000W

7

Appendix: 1, 1-3

Licensed Test mark:



Date of Issue

(day/mo/yr)

13/02/2014

TÜV Rheinland of North America, Inc., 12 Commerce Road, Newtown, CT 06470, Tel (203) 426-0888 Fax (203) 426-4009

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#### NOTICE

Specifications and part numbers are subject to change without notice.



# PARTS ORDERING PROCEDURES

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Use the **internet** and qualify for a **5% Discount** on *Standard orders* for all orders which include complete part numbers.\*

Note: Discounts Are Subject To Change



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- ☐ Dealer Account Number
- ☐ Dealer Name and Address
- ☐ Shipping Address (if different than billing address)
- ☐ Return Fax Number
- ☐ Applicable Model Number
- ☐ Quantity, Part Number and Description of Each Part

### ☐ Specify Preferred Method of Shipment:

- ☒ UPS/Fed Ex
- ☒ Priority One
- ☒ Ground
- ☒ Next Day
- ☒ Second/Third Day
- ☒ DHL
- ☒ Truck

### NOTICE

All orders are treated as *Standard Orders* and will ship the same day if received prior to 3PM PST.

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## SAFETY INFORMATION

Do not operate or service the equipment before reading the entire manual. Safety precautions should be followed at all times when operating this equipment. Failure to read and understand the safety messages and operating instructions could result in injury to yourself and others.

### SAFETY MESSAGES

The four safety messages shown below will inform you about potential hazards that could injure you or others. The safety messages specifically address the level of exposure to the operator and are preceded by one of four words: **DANGER**, **WARNING**, **CAUTION** or **NOTICE**.

#### SAFETY SYMBOLS



#### **DANGER**

Indicates a hazardous situation which, if not avoided, **WILL** result in **DEATH** or **SERIOUS INJURY**.



#### **WARNING**

Indicates a hazardous situation which, if not avoided, **COULD** result in **DEATH** or **SERIOUS INJURY**.



#### **CAUTION**

Indicates a hazardous situation which, if not avoided, **COULD** result in **MINOR** or **MODERATE INJURY**.

#### **NOTICE**

Addresses practices not related to personal injury.

### SAFETY SYMBOLS

Potential hazards associated with the operation of this equipment will be referenced with hazard symbols which may appear throughout this manual in conjunction with safety messages.

Symbol	Safety Hazard
	Lethal exhaust gas hazards
	Explosive fuel hazards
	Burn hazards
	Overspeed hazards
	Rotating parts hazards
	Pressurized fluid hazards
	Electric shock hazards

# SAFETY INFORMATION

## GENERAL SAFETY

### ⚠ CAUTION

- **NEVER** operate this equipment without proper protective clothing, shatterproof glasses, respiratory protection, hearing protection, steel-toed boots and other protective devices required by the job or city and state regulations.



- **NEVER** operate this equipment when not feeling well due to fatigue, illness or when under medication.



- **NEVER** operate this equipment under the influence of drugs or alcohol.



- **ALWAYS** check the equipment for loosened threads or bolts before starting.
- **DO NOT** use the equipment for any purpose other than its intended purposes or applications.

## NOTICE

- This equipment should only be operated by trained and qualified personnel 18 years of age and older.
- Whenever necessary, replace nameplate, operation and safety decals when they become difficult read.
- Manufacturer does not assume responsibility for any accident due to equipment modifications. Unauthorized equipment modification will void all warranties.
- **NEVER** use accessories or attachments that are not recommended by Multiquip for this equipment. Damage to the equipment and/or injury to user may result.

- **ALWAYS** know the location of the nearest fire extinguisher.



- **ALWAYS** know the location of the nearest first aid kit.



- **ALWAYS** know the location of the nearest phone or keep a phone on the job site. Also, know the phone numbers of the nearest **ambulance**, **doctor** and **fire department**. This information will be invaluable in the case of an emergency.

# SAFETY INFORMATION

## LIGHT TOWER SAFETY

### DANGER

- **NEVER** operate the equipment in an explosive atmosphere or near combustible materials. An explosion or fire could result causing severe **bodily harm or even death.**



### WARNING

- **NEVER** disconnect any **emergency or safety devices.** These devices are intended for operator safety. Disconnection of these devices can cause severe injury, bodily harm or even death. Disconnection of any of these devices will void all warranties.

### CAUTION

- **NEVER** lubricate components or attempt service on a running machine.
- **ALWAYS** ensure light tower is on level ground before use so that it cannot slide or shift around, endangering workers. Always keep immediate area free of bystanders.
- **ALWAYS** make sure trailer is leveled with all outriggers extended before raising tower. Outriggers must remain extended while tower is up.
- **ALWAYS** keep area behind trailer clear of people while raising and lowering mast.
- **NEVER** remove safety pin or pull mast locking pin while tower is in a raised position!
- **CHECK** the mast and winch cables for wear. If any problem occurs when lowering or raising the tower, **STOP** immediately! Contact a trained technician for assistance.
- **NEVER** pivot or retract mast while unit is operating.
- **NEVER** use the light tower mast as a crane. **DO NOT** lift anything with the mast.
- **ALWAYS** lower the light tower when not in use, or if high winds or electrical storms are expected.

### NOTICE

- **ALWAYS** keep the immediate area surrounding the light tower clean, neat, and free of debris.
- **ALWAYS** keep the machine in proper running condition.
- Fix damage to machine and replace any broken parts immediately.
- **ALWAYS** store equipment properly when it is not being used. Equipment should be stored in a clean, dry location out of the reach of children and unauthorized personnel.
- To prevent the light tower from overturning, **NEVER** use in winds that exceed **65 MPH (105 km/h).**

## LAMP SAFETY

### WARNING

- **NEVER** attempt to replace lamp with the power on. Always shut down the engine and turn off circuit breakers when changing the lamp.
- **ALWAYS** allow a sufficient amount of time for the lamp to **cool** before touching or changing. The possibility exists of severe burns.

### CAUTION

- **NEVER** use force when installing the lamp. Excessive force could cause the lamp to break, causing bodily harm.

### NOTICE

- **NEVER** leave any grease or oil residue on lamp surface when replacing or removing lamp. This can create hot spots, reducing the service life of the lamp.
- **ALWAYS** make sure lamp surface is clean and dry.
- **ALWAYS** replace with MQ recommended type lamp.
- **ALWAYS** have a **trained technician** install and remove a floodlight, or replace any damaged fixture wiring.

# SAFETY INFORMATION

## ENGINE SAFETY

### DANGER

- The engine fuel exhaust gases contain poisonous carbon monoxide. This gas is colorless and odorless, and can cause death if inhaled.
- The engine of this equipment requires an adequate free flow of cooling air. **NEVER** operate this equipment in any enclosed or narrow area where free flow of the air is restricted. If the air flow is restricted it will cause injury to people and property and serious damage to the equipment or engine.



### WARNING

- **DO NOT** place hands or fingers inside engine compartment when engine is running.
- **NEVER** operate the engine with heat shields or guards removed.
- Keep fingers, hands hair and clothing away from all moving parts to prevent injury.
- **DO NOT** remove the radiator cap while the engine is hot. High pressure boiling water will gush out of the radiator and severely scald any persons in the general area of the generator.
- **DO NOT** remove the coolant drain plug while the engine is hot. Hot coolant will gush out of the coolant tank and severely scald any persons in the general area of the generator.
- **DO NOT** remove the engine oil drain plug while the engine is hot. Hot oil will gush out of the oil tank and severely scald any persons in the general area of the generator.



### CAUTION

- **NEVER** touch the hot exhaust manifold, muffler or cylinder. Allow these parts to cool before servicing equipment.



## NOTICE

- **NEVER** run engine without an air filter or with a dirty air filter. Severe engine damage may occur. Service air filter frequently to prevent engine malfunction.
- **NEVER** tamper with the factory settings of the engine or engine governor. Damage to the engine or equipment can result if operating in speed ranges above the maximum allowable.
- **NEVER** tip the engine to extreme angles during lifting as it may cause oil to gravitate into the cylinder head, making the engine start difficult.
- Wet stacking is a common problem with diesel engines which are operated for extended periods with light or no load applied. When a diesel engine operates without sufficient load (less than 40% of the rated output), it will not operate at its optimum temperature. This will allow unburned fuel to accumulate in the exhaust system, which can foul the fuel injectors, engine valves and exhaust system, including turbochargers, and reduce the operating performance.



In order for a diesel engine to operate at peak efficiency, it must be able to provide fuel and air in the proper ratio and at a high enough engine temperature for the engine to completely burn all of the fuel.

Wet stacking does not usually cause any permanent damage and can be alleviated if additional load is applied to relieve the condition. It can reduce the system performance and increase maintenance. Applying an increasing load over a period of time until the excess fuel is burned off and the system capacity is reached usually can repair the condition. This can take several hours to burn off the accumulated unburned fuel.

- State Health Safety Codes and Public Resources Codes specify that in certain locations, spark arresters must be used on internal combustion engines that use hydrocarbon fuels. A spark arrester is a device designed to prevent accidental discharge of sparks or flames from the engine exhaust. Spark arresters are qualified and rated by the United States Forest Service for this purpose. In order to comply with local laws regarding spark arresters, consult the engine distributor or the local Health and Safety Administrator.

## SAFETY INFORMATION

### FUEL SAFETY

#### DANGER

- **DO NOT** start the engine near spilled fuel or combustible fluids. Diesel fuel is extremely flammable and its vapors can cause an explosion if ignited.
- **ALWAYS** refuel in a well-ventilated area, away from sparks and open flames.
- **ALWAYS** use extreme caution when working with **flammable** liquids.
- **DO NOT** fill the fuel tank while the engine is running or hot.
- **DO NOT** overfill tank, since spilled fuel could ignite if it comes into contact with hot engine parts or sparks from the ignition system.
- Store fuel in appropriate containers, in well-ventilated areas and away from sparks and flames.
- **NEVER** use fuel as a cleaning agent.
- **DO NOT** smoke around or near the equipment. Fire or explosion could result from fuel vapors or if fuel is spilled on a hot engine.



### TOWING SAFETY — LIGHT TOWER

#### CAUTION

- Check with your local county or state safety towing regulations, in addition to meeting **Department of Transportation (DOT) Safety Towing Regulations**, before towing your light tower.
- In order to reduce the possibility of an accident while transporting the light tower on public roads, **ALWAYS** make sure the trailer that supports the light tower and the towing vehicle are mechanically sound and in good operating condition.
- **ALWAYS** shutdown engine before transporting.
- Make sure the hitch and coupling of the towing vehicle are rated equal to, or greater than the trailer “gross vehicle weight rating.”



- **ALWAYS** inspect the hitch and coupling for wear. **NEVER** tow a trailer with defective hitches, couplings, chains, etc.
- Check the tire air pressure on both towing vehicle and trailer. **Trailer tires should be inflated to 50 psi cold.** Also check the tire tread wear on both vehicles.
- **ALWAYS** make sure the trailer is equipped with a **safety chain**.
- **ALWAYS** properly attach trailer’s safety chains to towing vehicle.
- **ALWAYS** make sure the vehicle and trailer directional, backup, brake and trailer lights are connected and working properly.
- DOT Requirements include the following:
  - Connect and test electric brake operation.
  - Secure portable power cables in cable tray with tie wraps.
- The maximum speed for highway towing is **55 MPH (86 km/h)** unless posted otherwise. Recommended off-road towing is not to exceed **15 MPH (24 km/h)** or less depending on type of terrain.
- Avoid sudden stops and starts. This can cause skidding, or jack-knifing. Smooth, gradual starts and stops will improve towing.
- Avoid sharp turns to prevent rolling.
- Trailer should be adjusted to a level position at all times when towing.
- Raise and lock trailer jack stands in up position when towing.

#### NOTICE

**ALWAYS remove** and **stow** the GB4000 lamp fixture prior to towing the light tower.

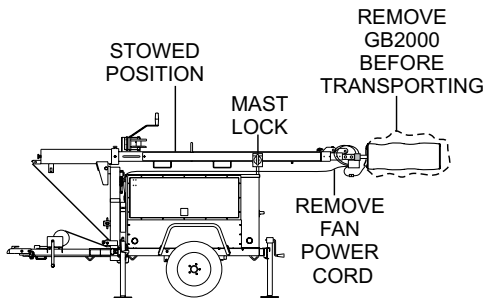


# SAFETY INFORMATION

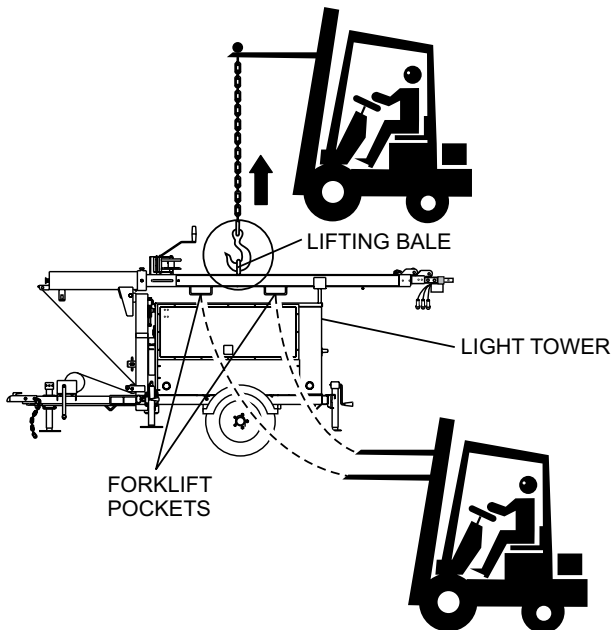
## TRANSPORTING SAFETY

### ⚠ CAUTION

- Before lifting, make sure that light tower parts are not damaged and screws are not loosened or lost.
- **ALWAYS** make sure crane or lifting device has been properly secured to lifting hook of the equipment.
- **NEVER** lift the equipment while engine is running.
- Remove fan power cord from junction box before towing.
- Make sure tower (mast) is in the stowed position and the GB4000 is removed from the mast before lifting.



- **ALWAYS** Make sure rear mast lock is secure before lifting.
- Use adequate lifting cable (wire or rope) of sufficient strength.
- Use one point suspension hook and lift straight upwards.

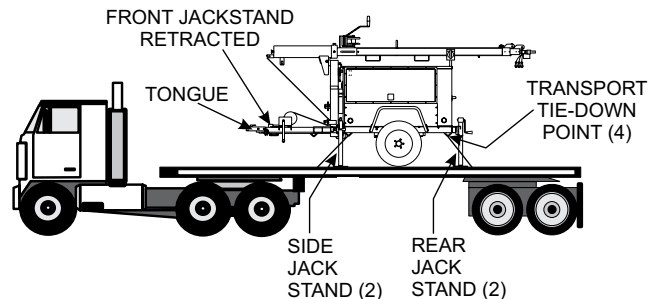


- If lifting through pockets, make sure forks of forklift are inserted in pockets as far as possible before lifting.
- Place **chock blocks** underneath wheel to prevent **rolling** while parked.
- Place **support blocks** underneath the trailer's bumper to prevent **tipping** while parked.
- Use the trailer's swivel jack to adjust the trailer height to a level position while parked.
- **NEVER** allow any person or animal to stand underneath the equipment while lifting.
- **DO NOT** lift equipment to unnecessary heights.

## Loading and Tie-Down on Flatbed Truck

### NOTICE

- Before loading light tower to flatbed truck, disconnect all connectors and tie-wrap the cables against the T-bar to prevent damage to the cables and connectors.
- Remove and stow the GB4000 in a safe place where it will not get damaged before loading the light tower onto a flatbed truck, towing, or shipping via a container.
- When loading onto flatbed truck, make sure that front jackstand of light tower is retracted and in the horizontal position so that the foot does not make contact with the deck floor.



- Make sure that the two side (left and right) and two rear jackstands are in the vertical position, slightly extended, so that each foot makes contact with the deck floor.
- Straps and chains should be routed through the transport tie-down points located beneath each corner of the cabinet to allow even application of force to the front and rear of the machine.
- **DO NOT** secure the unit by running a strap or chain over the tongue of the light tower. This may cause severe damage to the unit.

# SAFETY INFORMATION

## ELECTRICAL SAFETY

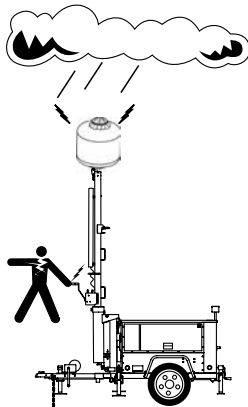
### DANGER

- The electrical voltage required to operate the generator can cause severe injury or even death through physical contact with live circuits. Turn generator and all circuit breakers **OFF** before performing maintenance on the generator.

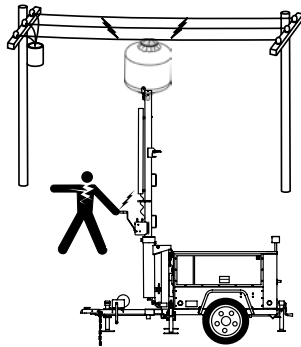
- **NEVER** insert any objects into the output receptacles during operation. This is extremely dangerous. The possibility exists of **electrical shock, electrocution or death**.



- **NEVER** operate light tower or handle any electrical equipment while standing in water, while barefoot, while hands are wet or in the rain. A dangerous **electrical shock** could occur, causing **severe bodily harm or even death**.



- **ALWAYS** make sure the area above the light tower is open and clear of overhead power lines and other obstructions. The tower extends in excess of 30 feet (9 meters). Contact with overhead power lines or other obstructions could result in equipment damage, **electrical shock, electrocution and even death**.



- Similar to boom equipment, light tower may become energized with high voltage. **DO NOT** operate the light tower within a radial distance of 17 feet (5.1 meters) from high voltage power lines. If light tower becomes energized with high voltage, contact with the equipment could result in electrocution.
- **NEVER** operate GB4000 in winds in excess of **40 MPH (64 km/h)**.

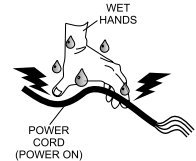
- Backfeed to a utility system can cause **electrocution** and/or property damage. **NEVER** connect the generator to a building's electrical system without a transfer switch or other approved device. All installations should be performed by a **licensed electrician** in accordance with all applicable laws and electrical codes. Failure to do so could result in electrical shock or burn, causing **serious injury or even death**.



## Power Cord/Cable Safety

### DANGER

- **NEVER** let power cords or cables lay in water.
- **NEVER** use **damaged** or **worn** cables or cords when connecting equipment to generator. Inspect for cuts in the insulation.
- **NEVER** grab or touch a live power cord or cable with wet hands. The possibility exists of **electrical shock, electrocution or death**.
- Make sure power cables are securely connected. Incorrect connections may cause electrical shock and damage to the light tower.



### NOTICE

- **ALWAYS** make certain that proper power or extension cord has been selected for the job.
- Ensure fan power cable is safely routed and secured as it travels from the junction box down the mast to the GFCI receptacle.

## Grounding Safety

### DANGER

- The light tower is equipped with a ground terminal for your protection. **ALWAYS** complete the grounding path from the light tower to an external grounding source.
- **ALWAYS** make sure that electrical circuits are properly grounded to a suitable earth ground (ground rod) per the National Electrical Code (NEC) and local codes before operating generator. **Severe injury or death by electrocution** can result from operating an ungrounded generator.
- **NEVER** use gas piping as an electrical ground.



# SAFETY INFORMATION

## BATTERY SAFETY

### DANGER

- **DO NOT** drop the battery. There is a possibility that the battery will explode.
- **DO NOT** expose the battery to open flames, sparks, cigarettes, etc. The battery contains combustible gases and liquids. If these gases and liquids come into contact with a flame or spark, an explosion could occur.



### WARNING

- **ALWAYS** wear safety glasses when handling the battery to avoid eye irritation. The battery contains acids that can cause injury to the eyes and skin.
- Use well-insulated gloves when picking up the battery.
- **ALWAYS** keep the battery charged. If the battery is not charged, combustible gas will build up.
- **ALWAYS** recharge the battery in a well-ventilated environment to avoid the risk of a dangerous concentration of combustible gasses.
- If the battery liquid (dilute sulfuric acid) comes into contact with **clothing or skin**, rinse skin or clothing immediately with plenty of water.
- If the battery liquid (dilute sulfuric acid) comes into contact with **eyes**, rinse eyes immediately with plenty of water and contact the nearest doctor or hospital to seek medical attention.



### CAUTION

- **ALWAYS** disconnect the **NEGATIVE** battery terminal before performing service on the generator.
- **ALWAYS** keep battery cables in good working condition. Repair or replace all worn cables.

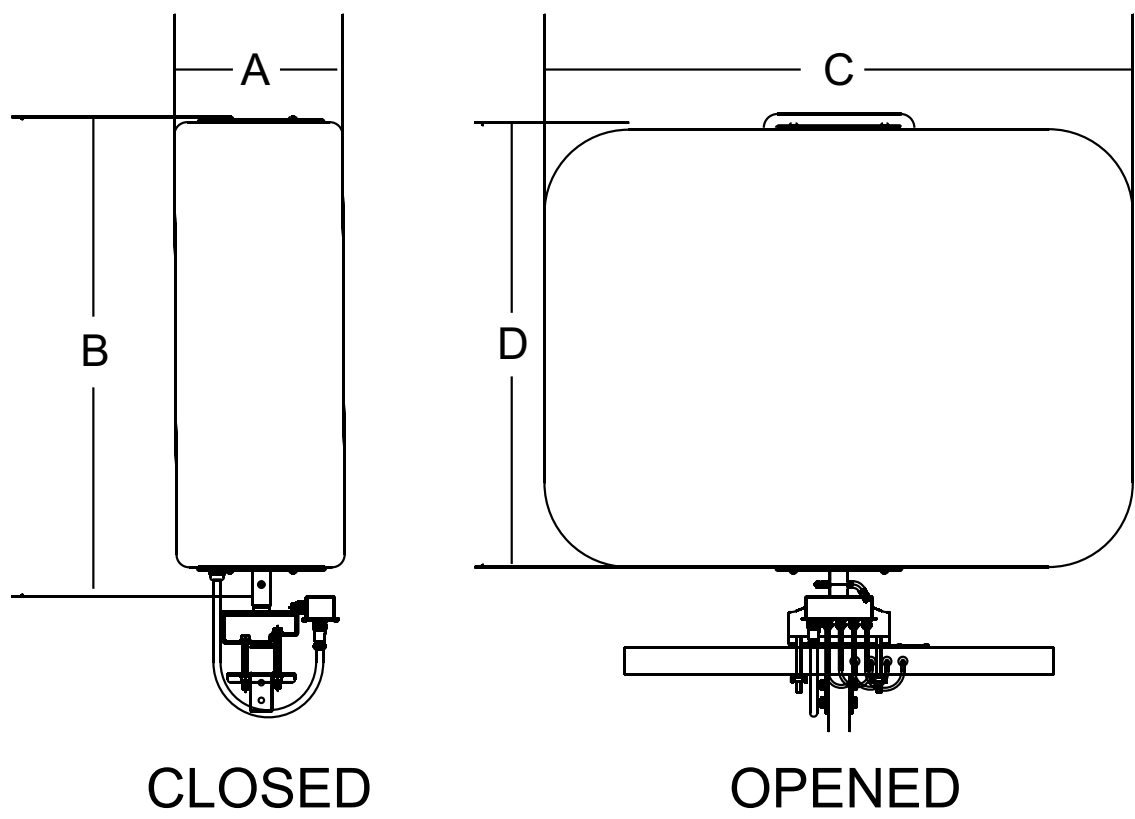
## ENVIRONMENTAL SAFETY

### NOTICE

- Dispose of hazardous waste properly. Examples of potentially hazardous waste are used motor oil, fuel and fuel filters.
- **DO NOT** use food or plastic containers to dispose of hazardous waste.
- **DO NOT** pour waste, oil or fuel directly onto the ground, down a drain or into any water source.



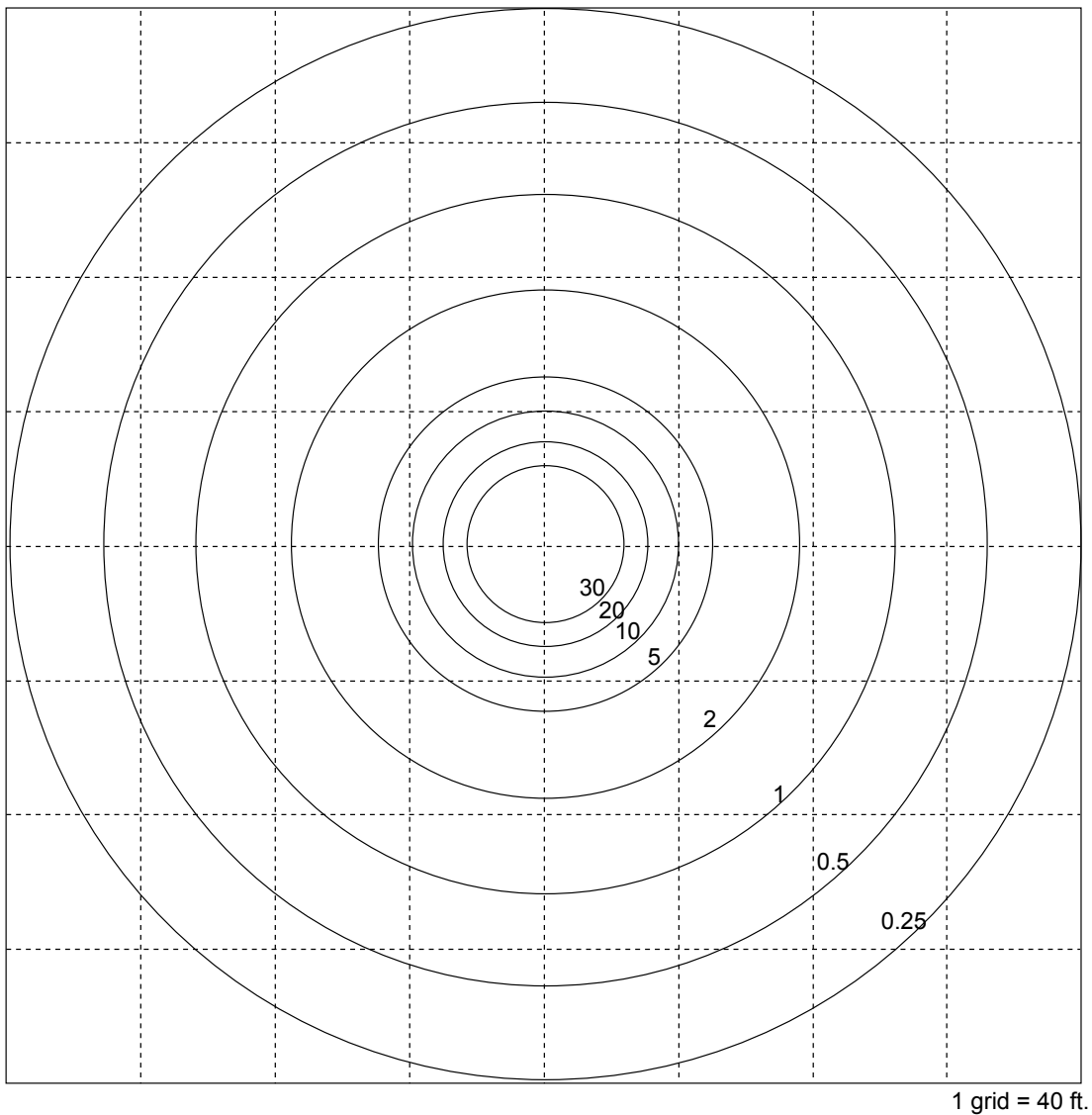
Table 1. Specifications		
Model		GB4000
Lamp	Type	1000 W Metal Halide (X4)
	Number of Bulbs	4
	Current	37.2 A (9.3 A x 4)
	Voltage	120 V
	Lumens	428,000 (10,700 x 4) lm
Fan	Current	1.2 A
	Voltage	24 VDC
Dimensions	Storage	15.7 x 15.7 x 45.6 in (400 x 400 x 1160 mm)
	Working	55.1 x 55.1 x 47.2 in (1400 x 1400 x 1200 mm)
Weight	Balloon	39.9 lb (18.1 kg)
	Bracket & J-Box	19.2 lb (8.7 kg)
	Total	59.1 lb (26.8 kg)
Appropriate Generator		3.2 kW and above



**Figure 1. Dimensions**

Table 2. Dimensions	
Reference Letter	Dimension in. (mm)
A	15.7 (400)
B	46 (1,170)
C	55.1 (1400)
D	41.7 (1,060)

# FOOTCANDLE PLOT



Illuminance (Footcandle)	30	20	10	5	2	1	0.5	0.25	0.1
Diameter (Feet)	46	60	78	98	149	205	259	314	426

## IES\* Recommended Levels of Illumination

Area	Foot Candles	Area	Foot Candles
Airport	0.5-2	Loading & Unloading	20
Explosives Handling	30	Parking Area	1-5
General Construction	10	Piers	20
Excavation	2	Railroad Yards, Switching	2
Haul Roads and Industrial Roadways	0.5-1	Quarries & Open Pit Mining	5
Industrial Yard/Material Handling	5	Sportsfield & Recreational	10-50

\*Illuminating Engineering Society

**Figure 2. Footcandle Plot**

The GB4000 lamp fixture is a difused balloon light that is designed to be mounted and operated on most conventional mobile light tower masts. Its design and features permit clean, difused light to be cast uniformly over 232 feet (70.7 meters).

The shadow-less lighting dramatically reduces glare in the work area. This type of lighting improves safety and enhances the illuminated area. The GB4000 is ideal for highway work, construction job sites, security support, and special events.

The balloon light assembly is supported by four 1000-watt metal halide lamps, self-inflating durable polyester balloon bag, protective lamp guard, quick disconnect communal mast bracket, and self-contained electrical junction box.

Once attached to the mast, the GB4000 utilizes the ballast assembly, electrical conduits, and receptacle connections of conventional mobile light towers to permit operation.

The GB4000 requires 2000 watts of power and the host light tower electrical ballast system for operation. Total lamp operation will be limited to the design and capacity of the host light tower.

The unit easily disconnects from the light tower mast and can be easily stored in its protective canvas cover case.

## COMPONENTS

1. **Lamp Fixture** — Made of heat resistant polyester balloon and four 1000-watt metal halide lamps.
2. **Locking Pin** — Locks the lamp fixture in place when attached to the pole on the bracket.
3. **Balloon Power Cable** — Provides AC power to the lamps, fan and balloon inflation circuit.
4. **Adapter Plate** — Attaches to the T-Bar and mast interface of the light tower to allow the GB4000 to be installed.

### NOTICE

This adapter plate (item 4) fits most conventional light tower masts.

5. **Junction Box** — Holds the electrical connection and cables to connect the lamp fixture to the T-Bar and to the power cable.
6. **Support Bracket** — Attaches to T-Bar to support adapter plate (hardware not shown).
7. **Connector Cap** — Provides protection to the receptacle on the junction box when not in use.

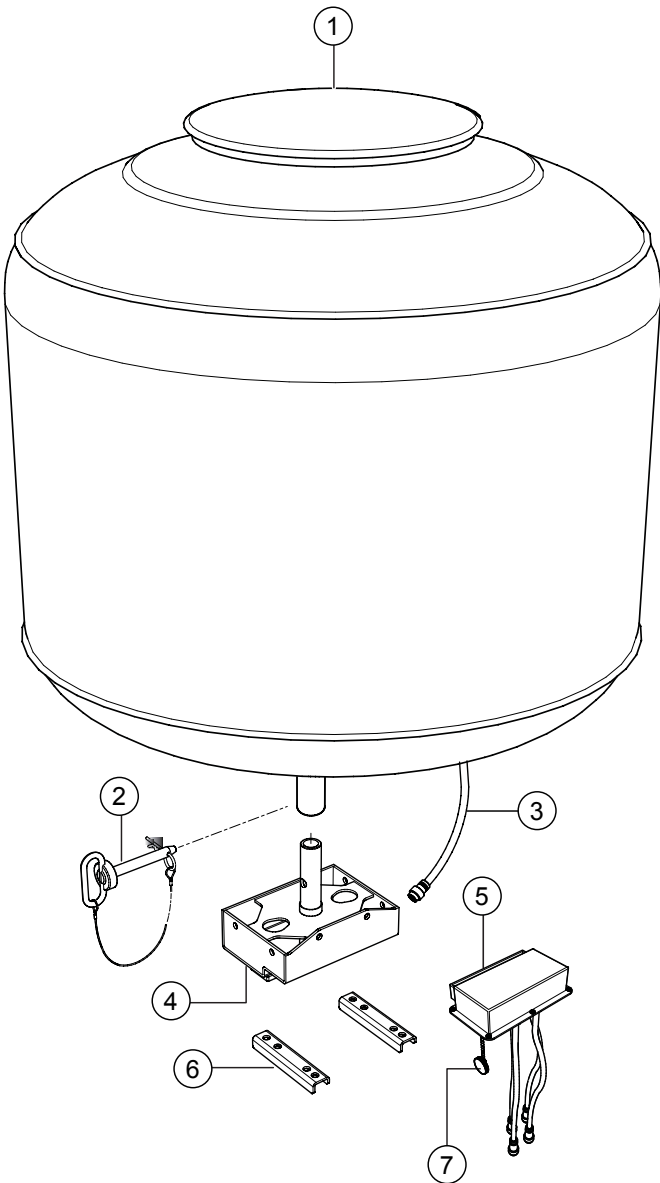


Figure 3. GB4000 Components

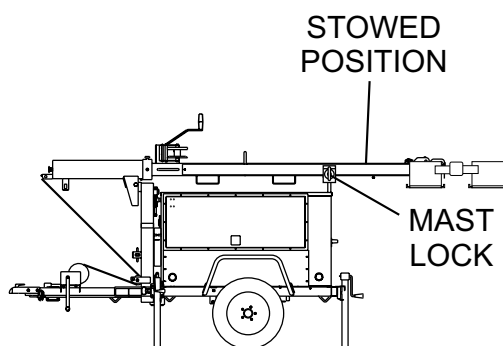
## PREPARATION

1. Place the light tower in an area free of dirt and debris with enough clearance as not to interfere with any overhead obstructions. Make sure it is on secure level ground with chock blocks underneath each wheel to prevent the light tower from rolling.

**DANGER**

**ALWAYS** make sure the area above light tower is open and clear of overhead power lines and other obstructions. The tower extends in excess of 30 ft. (9 meters). Contact with overhead power lines or other obstructions could result in equipment damage, serious injury or death!

2. If the light tower is in the deployed position, place the tower mast into the cradle support (stowed position). See Figure 4. Make sure cradle lock/release pin has been inserted and the mast is locked.



**Figure 4. Light Tower in Stowed Position**

### NOTICE

The new lamp adapter plate requires no existing lamp removal for installation. All lamps can remain in place during installation of the adapter plate.

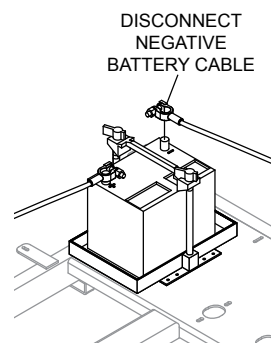
### NOTICE

Only mount the GB4000 on Light Towers that are equipped with one of the following ballasts:

- UNIVERSAL LIGHTING TECHNOLOGIES INC: M1000120AC5M
- PHILIPS LIGHTING ELECTRONICNA : 71A-6592.

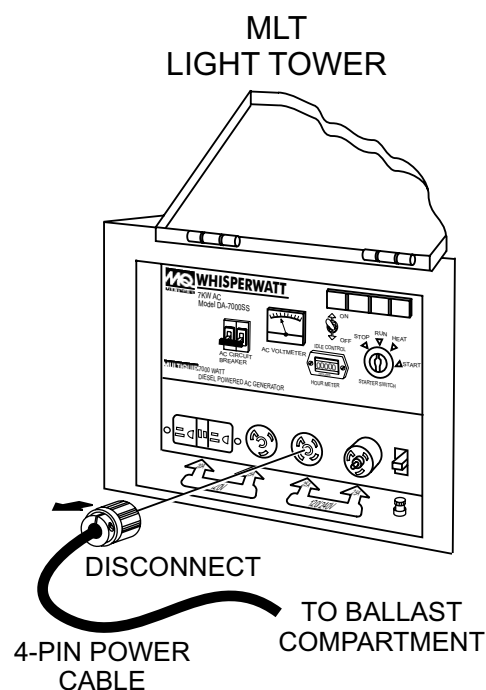
## POWER DISCONNECTION

1. For LT12D light towers, disconnect the negative cable (black) from battery. See Figure 5.



**Figure 5. Disconnecting Battery**

2. For MLT series light towers disconnect the 4-pin power cable (Figure 6) from the 120 VAC twist-lock receptacle on the front panel of the generator.



**Figure 6. MLT Power Cable Removal**

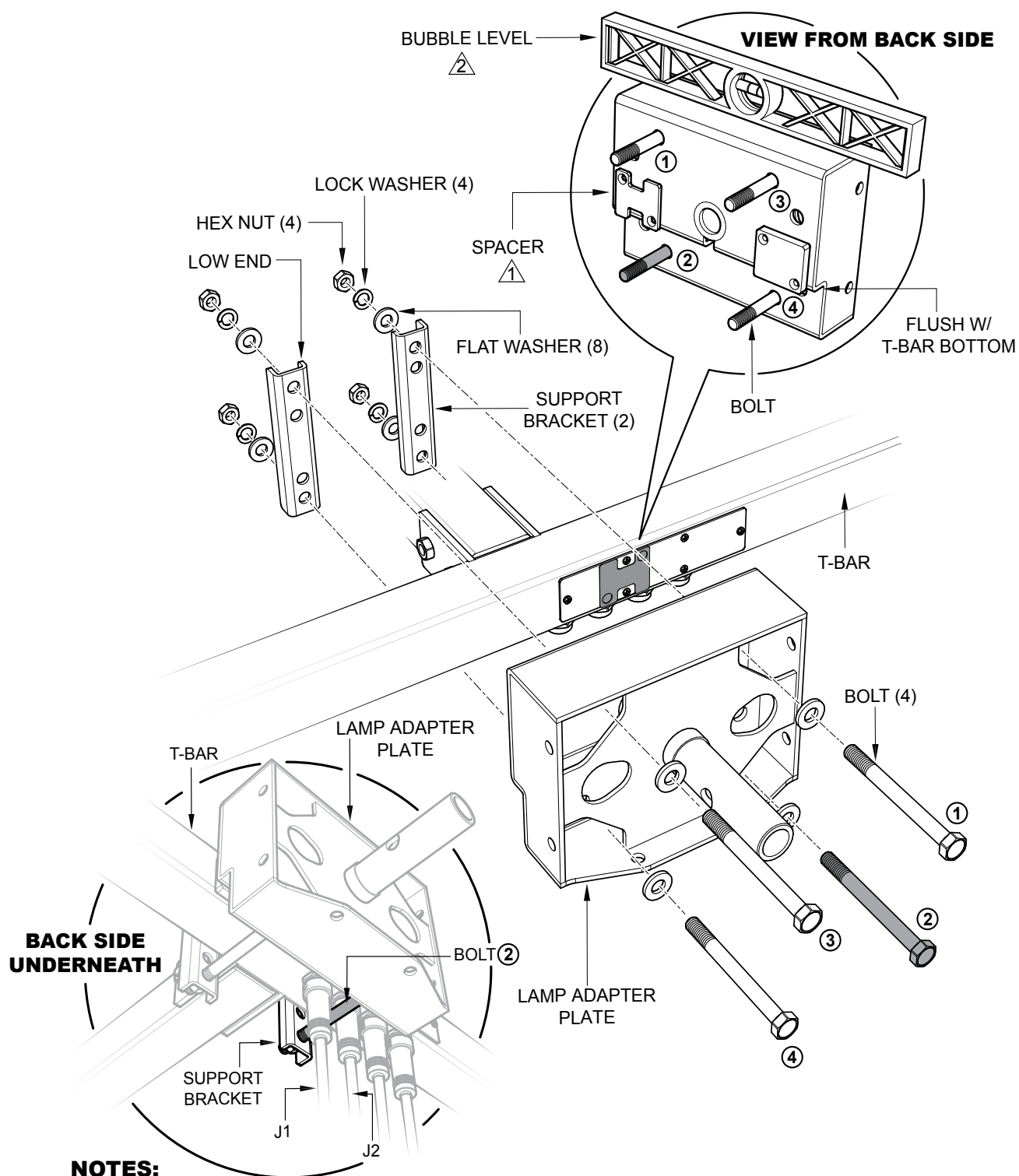
## LAMP ADAPTER PLATE MOUNTING INSTALLATION

1. Remove the adapter plate kit hardware from its container.
2. Before proceeding make sure the light tower mast is in the stow position (down) and the cradle lock/release pin has been inserted and the mast is locked.
3. Attach the lamp adapter plate to the T-Bar as shown in Figure 7. Align adapter plate so that adapter spacer notch fits over screw on T-Bar. Pay close attention to the orientation of the two support brackets.
4. Mount the flat end of both support brackets flush against the T-Bar with the **low** end of each bracket facing inwards toward the mast. The **raised** end of each bracket should be facing outward.
5. Next, insert a bolt (4) and flat washer (4) thru the mounting holes on the adapter plate as shown in Figure 7. Again, pay close attention on which set of holes to insert the bolts thru. **Bolt number 2** must be oriented so that it passes between receptacles J1 and J2 on the T-Bar.
6. Secure the adapter plate to the T-Bar using the supplied flat washer (4), lock washer (4) and nut (4). Make sure the adapter plate is level (use a bubble level) and both brackets are straight (vertical), not slanted, before tightening.

### NOTICE

Pay close attention to the orientation of the two support brackets. Each bracket has a high and low side. The low side of the bracket should be facing inwards towards the mast.





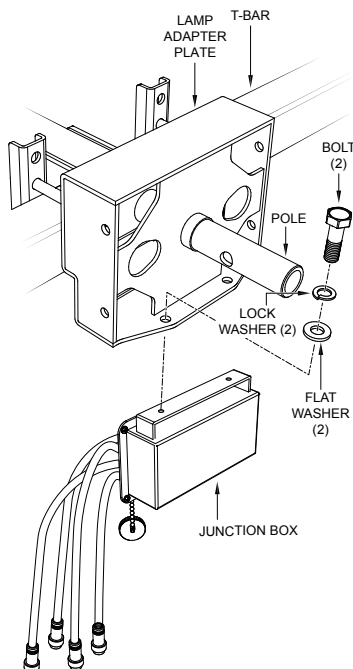
## NOTES:

- 1 It is important for the adapter SPACER to seat against the T-Bar as shown above.
- 2 For proper alignment of the adapter plate, use of a bubble level is required.

**Figure 7. Adapter Plate Mounting Installation**

## JUNCTION BOX MOUNTING

1. Secure the junction box (Figure 8) to the adapter plate using the supplied bolts (2), lock washer (2), and flat washer (2). Tighten mounting bolts securely.



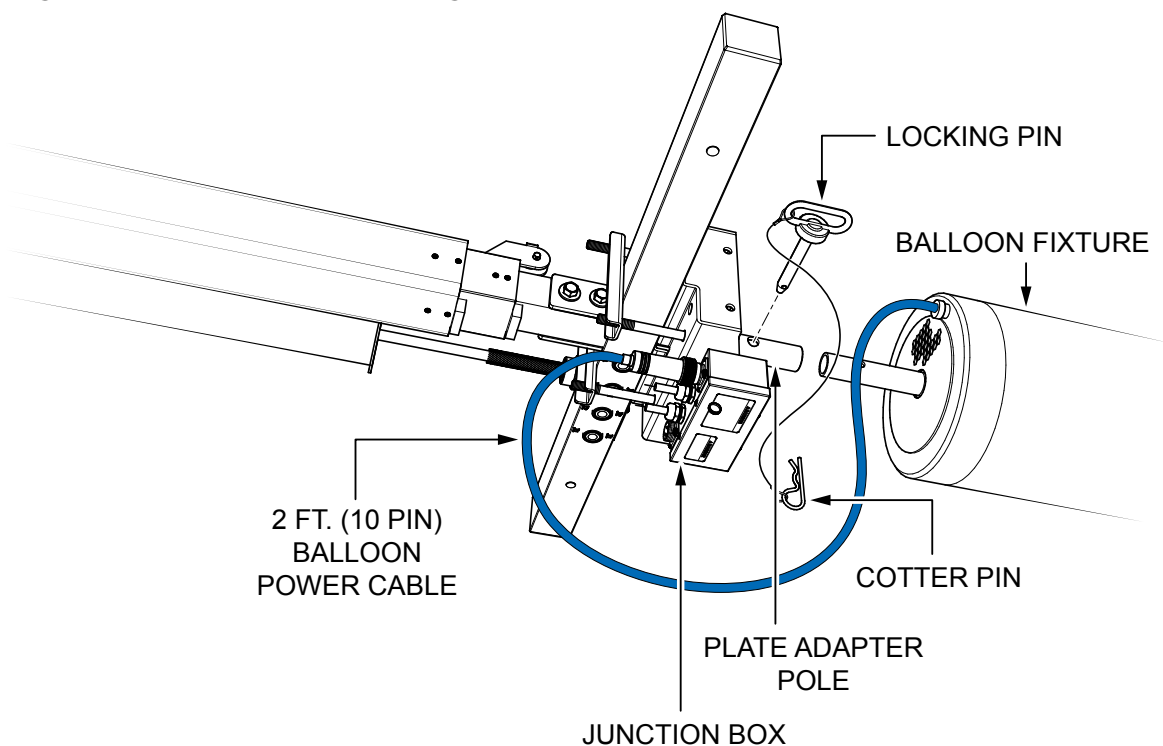
**Figure 8. Junction Box Mounting**

## LAMP MOUNTING

1. Place the GB4000 lamp fixture onto the lamp adapter plate pole as shown in Figure 9.
2. Insert locking pin into hole opening on pole, then insert cotter pin to lock pin in place.

## BALLOON POWER CABLE

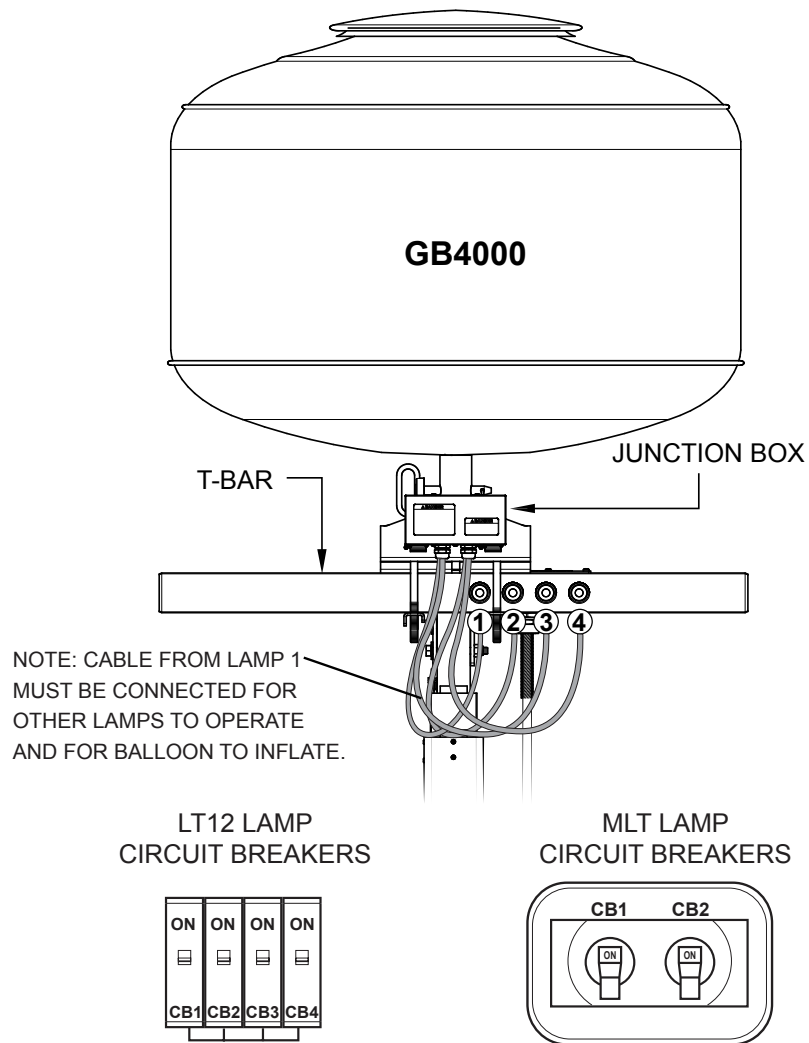
1. Connect the balloon power cable (Figure 9) to the 10-pin receptacle on the junction box.



**Figure 9. Balloon Power Cable Connection**

## LAMP CABLE CONNECTIONS

On the T-Bar (Figure 10) there are four power receptacles J1, J2, J3 and J4. These receptacles provide AC power to the existing rectangular lamps. When the GB4000 lamp assembly is employed, these receptacles are used to connect the GB4000. Refer to Figure 10.



**Figure 10. Lighting Configuration**

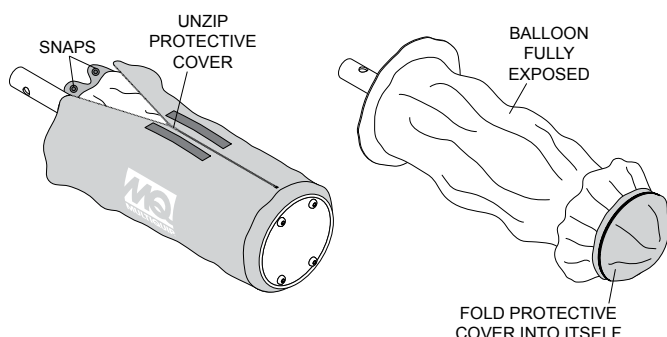
## REMOVING BALLOON PROTECTIVE COVER

### CAUTION



**DO NOT** use excessive force when zipping or unzipping the balloon. The possibility exists of the zipper tearing, which would make the balloon unusable.

1. Expose the balloon by unsnapping the buttons and unzipping the protective cover as shown in Figure 11.



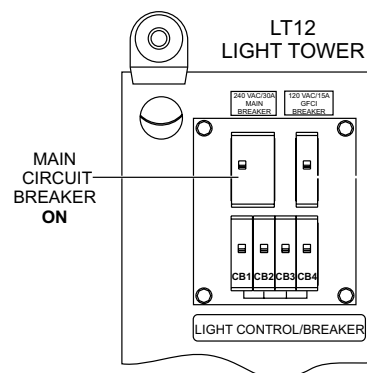
**Figure 11. Removing Protective Cover**

2. Next, fold the protective cover into itself and zip. See Figure 11.

## INFLATING BALLOON AND TURNING ON LAMPS (LT12 ONLY)

1. On LT12 series light towers, reconnect negative battery cable (black).
2. Slightly raise the light tower mast to allow clearance for the balloon to inflate.
3. Start the light tower engine as referenced in the LT12 light tower operation manual.

4. Once, the engine has started, place the main circuit breaker switch (Figure 12) on the LT12 control panel in the ON position.



**Figure 12. Main Breaker ON (LT12)**

5. Next, turn on lamp circuit breakers. The balloon should begin to inflate and the lamps will light.
6. Secure any unused lamp cables.
7. Raise the light tower mast to the desired upright height.

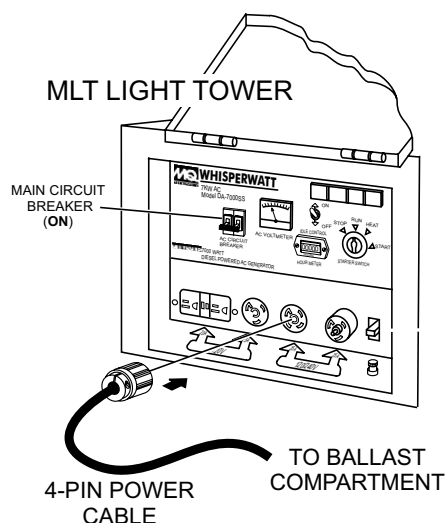
## INFLATING BALLOON AND TURNING ON LAMPS (MLT ONLY)

1. On MLT series light towers, reconnect the 4-pin power cable (Figure 13) to the 120 VAC twist-lock receptacle on the front panel of the generator.



**Figure 13. MLT Ballast 4-pin Power Cable**

2. Slightly raise the light tower mast to allow clearance for the balloon to inflate.
3. Start the light tower engine as referenced in the MLT operation manual.
4. Once, the engine has started, place the main circuit breaker switch (Figure 14) on the MLT front control panel in the **ON** position.



**Figure 14. Main, GFCI Circuit Breakers (ON/MLT)**

5. Next, turn on lamp circuit breakers. The balloon should begin to inflate and the lamps will light.
6. Secure any unused lamp cables.
7. Raise the light tower mast to the desired upright height.

## DEFLATING AND STORING BALLOON

1. Turn lamps **OFF** and allow to cool for at least five minutes.
2. Once the lamps have cooled, place the main breaker switch in the **OFF** position.

### NOTICE

**ALWAYS** make sure lamps are turned off and allowed to cool before deflating balloon to avoid any damage to the balloon. **NEVER** transport GB4000 lamp fixture while attached to mast.

3. When the balloon is completely deflated, unzip the protective cover and fold the balloon inside the cover.
4. Carefully zip up the cover and snap the buttons to fully close the protective cover.
5. Remove all cables from T-Bar, and remove balloon power cable from junction box.
6. Pull cotter pin from locking pin and remove lamp assembly from light tower mast.
7. Store lamp assembly in a safe place where it will not get damaged.

## REPLACING LAMP

### DANGER

Never attempt to replace lamp in a wet place. The possibility exists of electric shock.

### WARNING

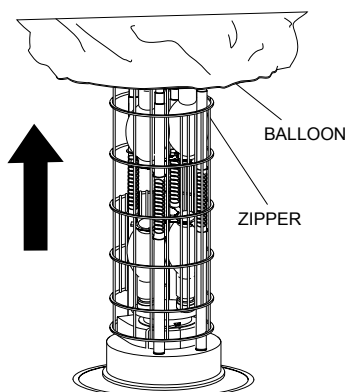


Always allow sufficient time for the lamp to cool down before replacing. The possibility exists of severe burns if hot lamp is touched.

### CAUTION

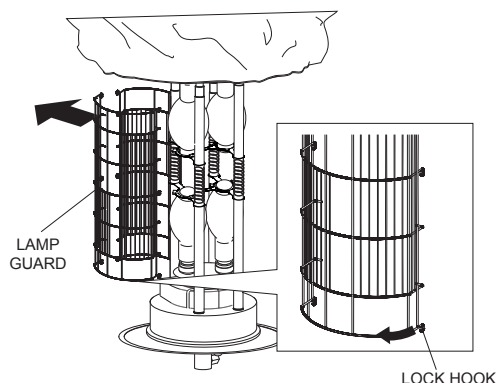
Always shutdown power source and remove balloon assembly from mast when replacing a broken lamp. Utmost care should be taken in handling broken lamp. The possibility exists of serious injury from handling a broken lamp.

1. Unzip the zipper at the bottom of the balloon and roll the balloon up to expose the lamp. See Figure 15.



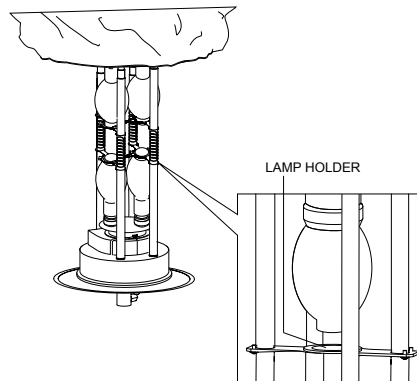
**Figure 15. Exposing Balloon**

2. Release the lamp guard hooks from the poles and remove the two lamp guards. See Figure 16.



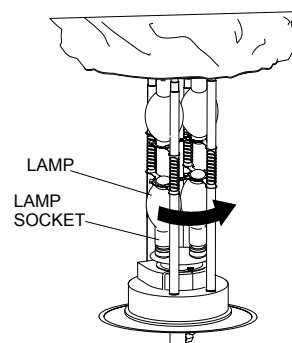
**Figure 16. Removing Lamp Guard**

3. Press the tabs on the lamp holder and push up lamp holder to release it from lamp. Do the same to the lower lamp if necessary. See Figure 17.



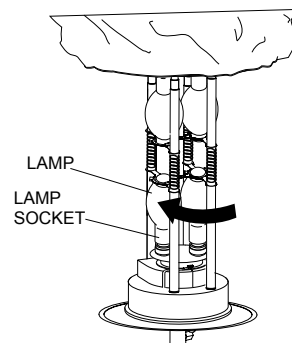
**Figure 17. Lamp Holder**

4. Remove lamp from the lamp socket by turning lamp counterclockwise. See Figure 18.



**Figure 18. Removing Lamp**

5. Install new lamp into socket and turn lamp in a clockwise direction until tight. See Figure 19.



**Figure 19. Installing New Lamp**

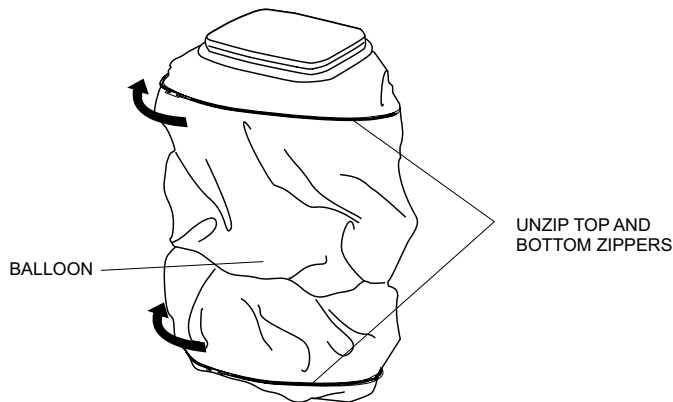
## NOTICE

Do not use excessive force when screwing the lamp to prevent lamp from breaking.

6. Secure lamp holder on top of the lamp.
7. Reinstall lamp guard.
8. Pull down balloon and zip the bottom zipper to cover lamp.

## REPLACING BALLOON

1. Unzip the top and bottom of the balloon. See Figure 20.



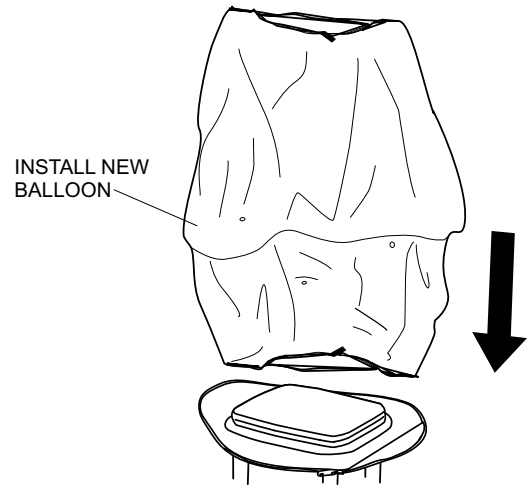
**Figure 20. Unzipping Balloon**

2. Slide out the old or worn balloon over the top of the lamp guard assembly. See Figure 21.



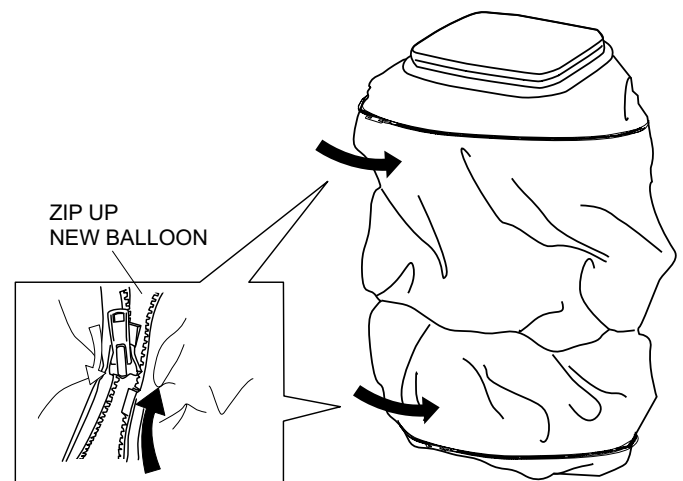
**Figure 21. Removing Old Balloon**

3. Slide in the new replacement balloon over the top of the lamp guard assembly. See Figure 22.



**Figure 22. Replacing Balloon**

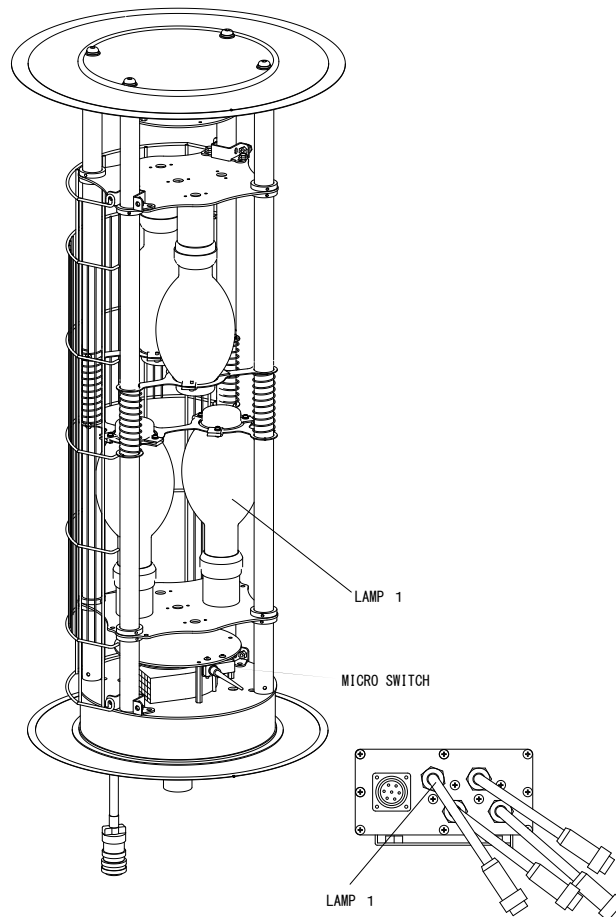
4. Zip up the top and bottom of the new balloon. See Figure 23.



**Figure 23. Zipping Up New Balloon**

**Table 3. Troubleshooting**

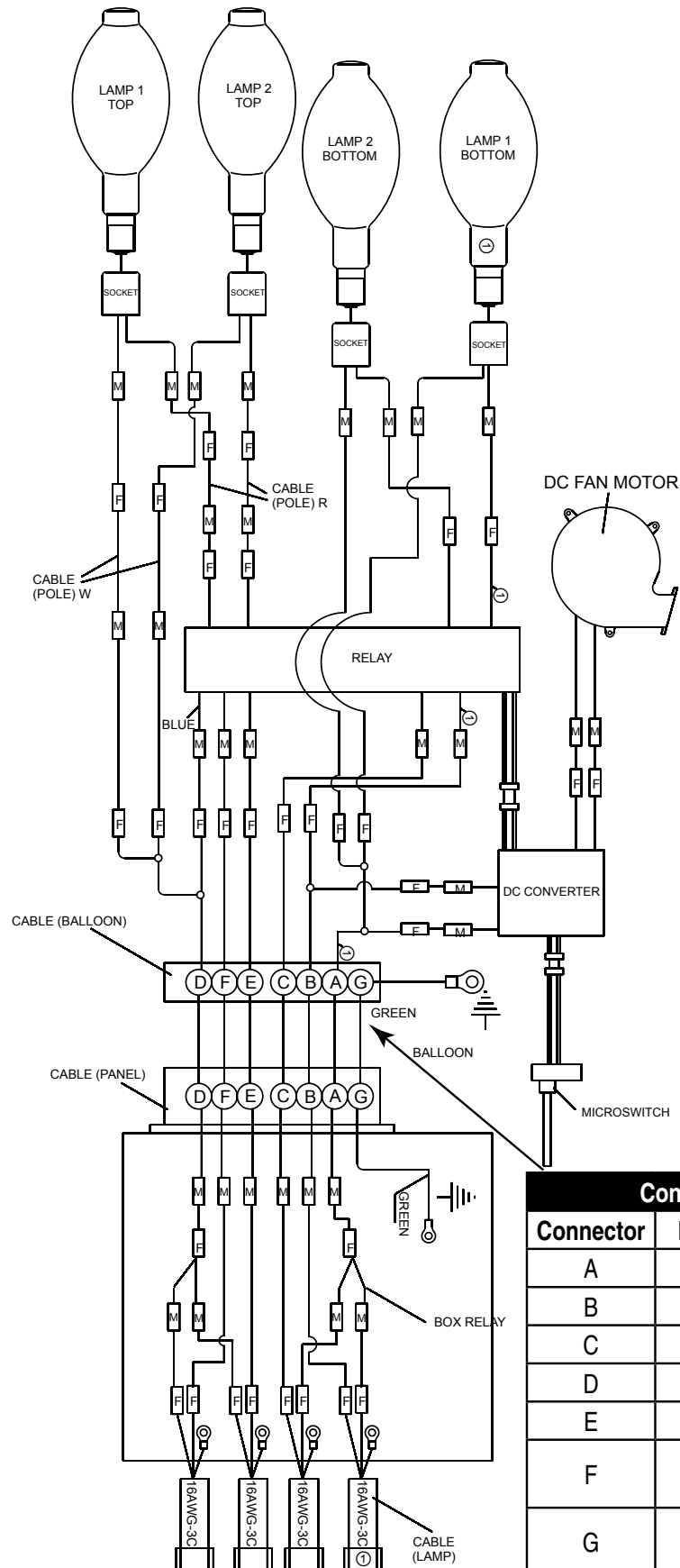
SYMPTOM	POSSIBLE PROBLEM	SOLUTION
Lamp does not light.	Is plug disconnected?	Plug in correctly.
	Is generator power switched off?	Turn on switch.
	Is lamp loose?	Screw lamp securely into socket.
	Is power connector disconnected or loose?	Connect disconnected connector.
	Is model of lamp incompatible?	Use genuine MQ lamp.
Lamp only lights for a short time.	Is ambient temperature too high - more than 104° F (40° C)?	Move lamp where there is proper ventilation.
Balloon does not inflate.	Is fan motor not working properly?	Check and repair fan motor.
	Is balloon cloth defective?	Repair or replace balloon cloth.
	Is Lamp 1 on but fan is not working?	Check and repair fan motor.
Only Fan is working.	Is Lamp 1 not turning on?	Check Lamps and cable wiring.
Shuts down after 30 seconds.	Is Microswitch being pressed?	Check Microswitch or repair fan motor.



**Figure 24. Location of Maintenance Parts**



# WIRING DIAGRAM



Connectors		
Connector	Number	Color
A	1	Black
B	2	White
C	3	Red
D	4	Orange
E	5	Blue
F	6	Black/White
G	Green/Yellow	Green

## EXPLANATION OF CODE IN REMARKS COLUMN

The following section explains the different symbols and remarks used in the Parts section of this manual. Use the help numbers found on the back page of the manual if there are any questions.

### NOTICE

The contents and part numbers listed in the parts section are subject to change **without notice**. Multiquip does not guarantee the availability of the parts listed.

### SAMPLE PARTS LIST

NO.	PART NO.	PART NAME	QTY.	REMARKS
1	12345	BOLT .....	1	INCLUDES ITEMS W/%
2%		WASHER, 1/4 IN. ....		NOT SOLD SEPARATELY
2%	12347	WASHER, 3/8 IN. ...	1	MQ-45T ONLY
3	12348	HOSE .....	A/R	MAKE LOCALLY
4	12349	BEARING .....	1	S/N 2345B AND ABOVE

### NO. Column

**Unique Symbols** — All items with same unique symbol (@, #, +, %, or >) in the number column belong to the same assembly or kit, which is indicated by a note in the “Remarks” column.

**Duplicate Item Numbers** — Duplicate numbers indicate multiple part numbers, which are in effect for the same general item, such as different size saw blade guards in use or a part that has been updated on newer versions of the same machine.

### NOTICE

When ordering a part that has more than one item number listed, check the remarks column for help in determining the proper part to order.

### PART NO. Column

**Numbers Used** — Part numbers can be indicated by a number, a blank entry, or TBD.

TBD (To Be Determined) is generally used to show a part that has not been assigned a formal part number at the time of publication.

A blank entry generally indicates that the item is not sold separately or is not sold by Multiquip. Other entries will be clarified in the “Remarks” Column.

### QTY. Column

**Numbers Used** — Item quantity can be indicated by a number, a blank entry, or A/R.

A/R (As Required) is generally used for hoses or other parts that are sold in bulk and cut to length.

A blank entry generally indicates that the item is not sold separately. Other entries will be clarified in the “Remarks” Column.

### REMARKS Column

Some of the most common notes found in the “Remarks” Column are listed below. Other additional notes needed to describe the item can also be shown.

**Assembly/Kit** — All items on the parts list with the same unique symbol will be included when this item is purchased.

Indicated by:

“INCLUDES ITEMS W/(unique symbol)”

**Serial Number Break** — Used to list an effective serial number range where a particular part is used.

Indicated by:

“S/N XXXXX AND BELOW”

“S/N XXXX AND ABOVE”

“S/N XXXX TO S/N XXX”

**Specific Model Number Use** — Indicates that the part is used only with the specific model number or model number variant listed. It can also be used to show a part is NOT used on a specific model or model number variant.

Indicated by:

“XXXXX ONLY”

“NOT USED ON XXXX”

**“Make/Obtain Locally”** — Indicates that the part can be purchased at any hardware shop or made out of available items. Examples include battery cables, shims, and certain washers and nuts.

**“Not Sold Separately”** — Indicates that an item cannot be purchased as a separate item and is either part of an assembly/kit that can be purchased, or is not available for sale through Multiquip.

# SUGGESTED SPARE PARTS

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## GB4000 BALLOON LIGHT

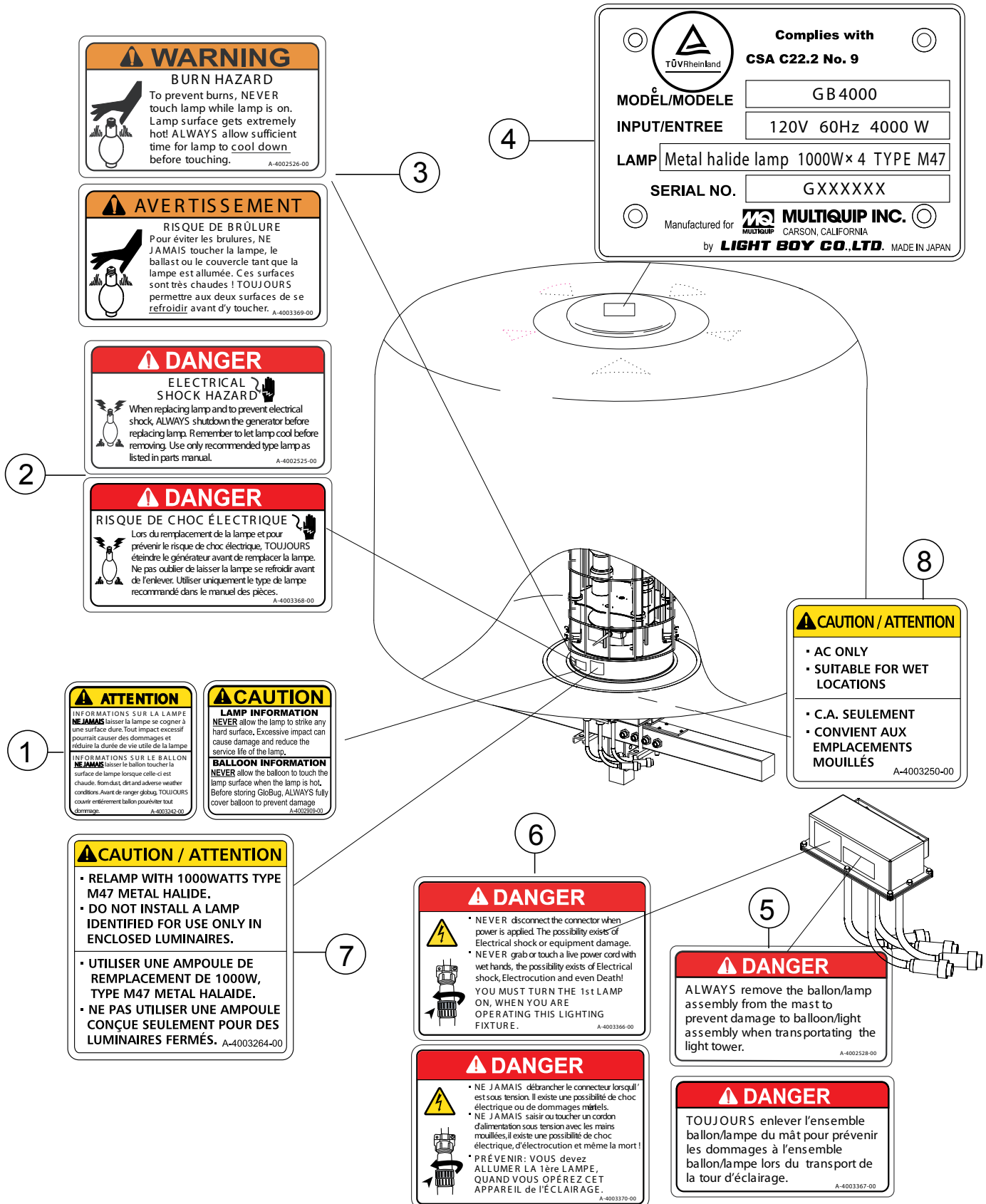
1 to 3 units

Qty.	P/N	Description
2.....	E000127300 .....	LAMP
2.....	A100097802 .....	BALLOON COVER CP
3.....	A400038301 .....	FILTER

### NOTICE

Part numbers on this Suggested Spare Parts list may supersede/replace the part numbers shown in the following parts lists.

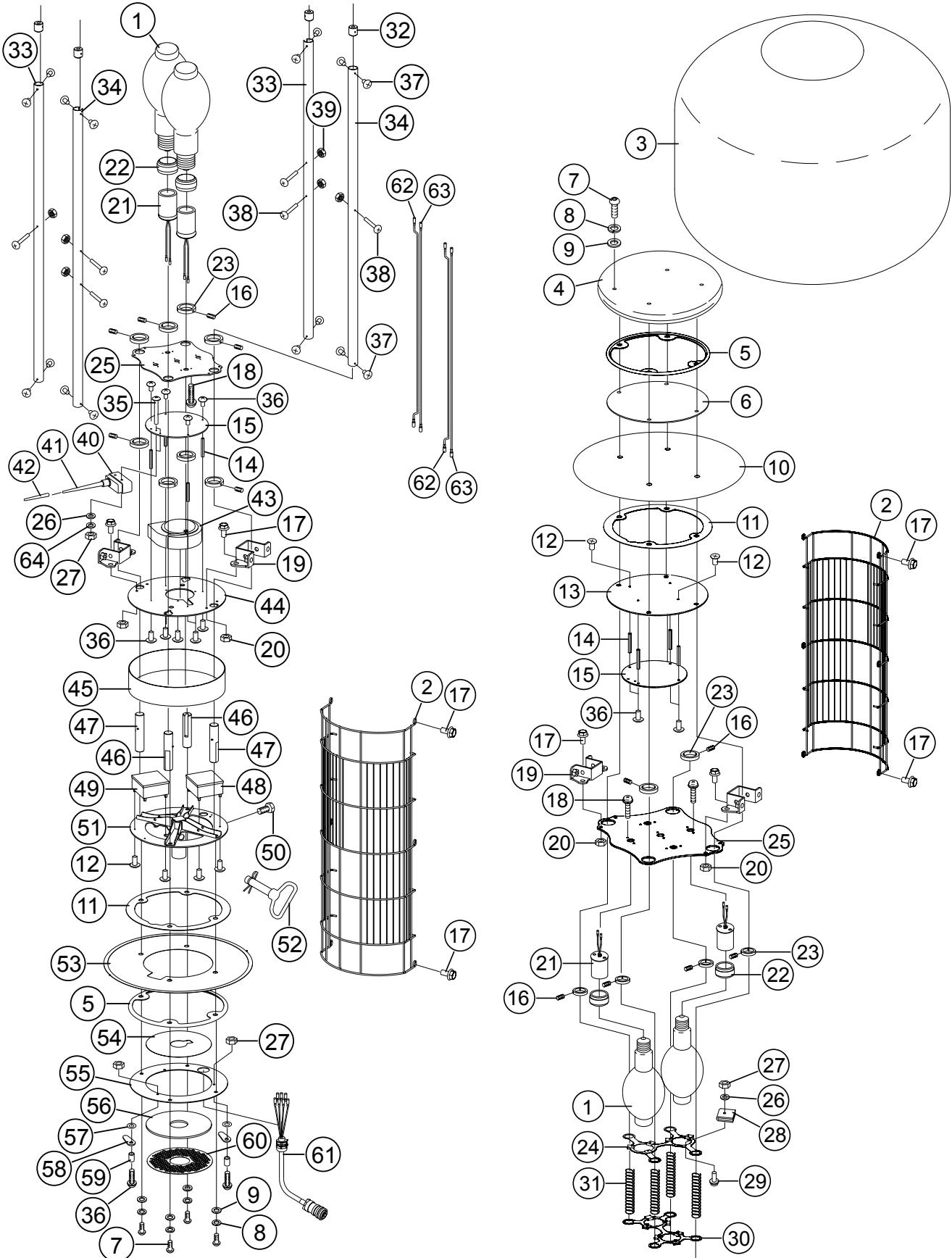
# NAMEPLATE AND DECALS



## NAMEPLATE AND DECALS

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
1	A400290900	DECAL; CAUTION, LAMP INFORMATION (ENGLISH)	1	
1	A400324200	DECAL; CAUTION, LAMP INFORMATION (FRENCH)	1	
2	A400252500	DECAL; DANGER, ELECTRICAL SHOCK HAZARD (ENGLISH)	1	
2	A400336800	DECAL; DANGER, ELECTRICAL SHOCK HAZARD (FRENCH)	1	
3	A400252600	DECAL; WARNING, BURN HAZARD (ENGLISH)	1	
3	A400336900	DECAL; WARNING, BURN HAZARD (FRENCH)	1	
4		DECAL; SERIAL PLATE .....	1	.....CONTACTMQPARTSDEPT.
5	A400252800	DECAL; DANGER, BALLOON/LAMP REMOVAL (ENGLISH)	1	
5	A400336700	DECAL; DANGER, BALLOON/LAMP REMOVAL (FRENCH)	1	
6	A400336600	DECAL; DANGER, ELECTRICAL SHOCK CONNECTOR (ENGLISH)	1	
6	A400337000	DECAL; DANGER, ELECTRICAL SHOCK CONNECTOR (FRENCH)	1	
7	A400326400	DECAL; CAUTION,, LAMP TYPE	1	
8	A400325000	DECAL; CAUTION, AC ONLY	1	

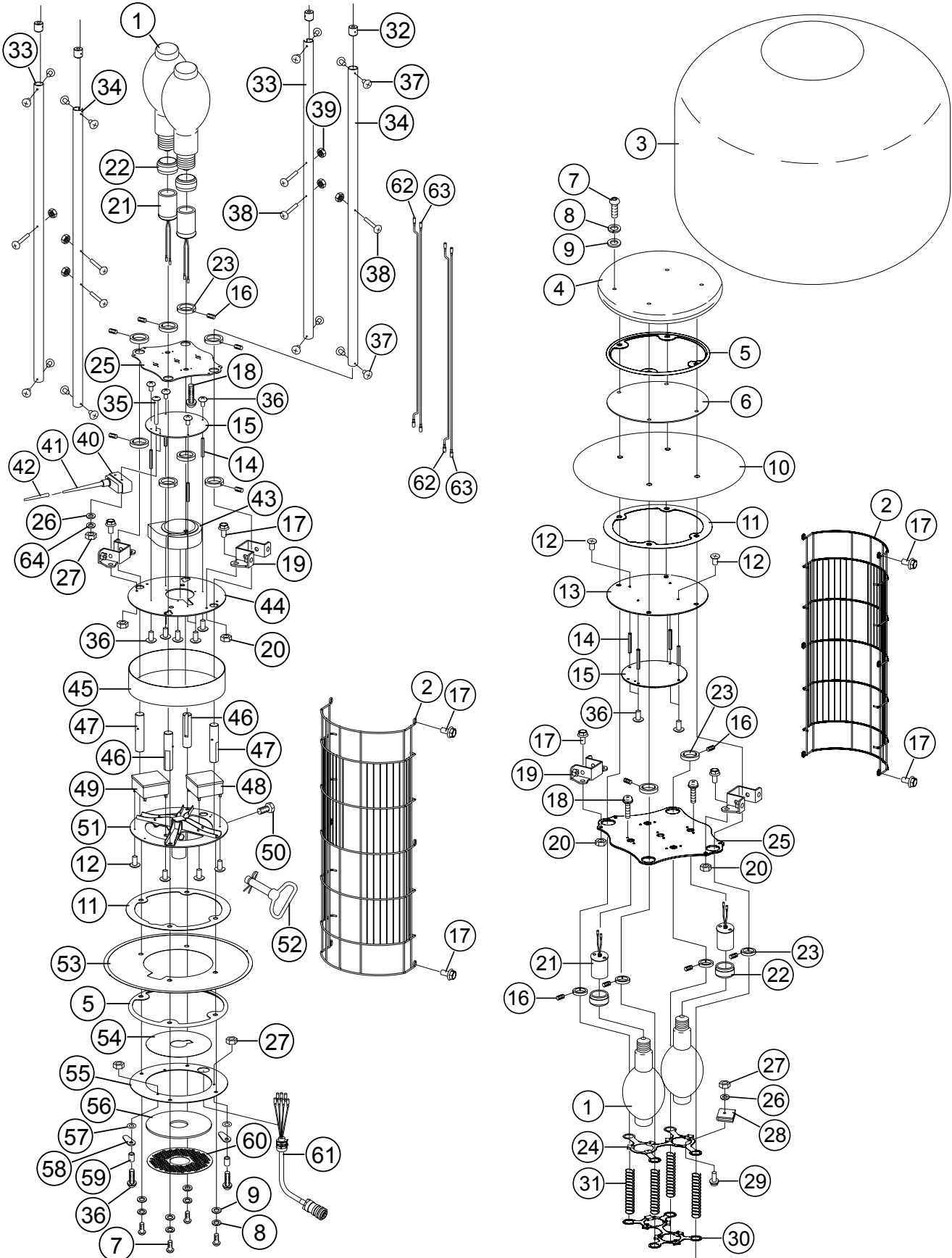
# ELECTRICAL ASSY.



## ELECTRICAL ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
1	E000127300	LAMP	4	
2	A100100002	LAMP GUARD	2	
3	A100098700	BALLOON	1	
4	A100097802	BALLOON COVER CP	1	
5	2204500230	SEAL (PACKING)	2	
6	2204220130	PLATE (CAP)	1	
7	0014710035	BUTTON BOLT (M10x35)	8	
8	0043210000	SPRING WASHER (M10)	8	
9	0043110000	WASHER (M10)	8	
10	1800001000	SHEET (TOP)	1	
11	2204500131	SEAL (NORMAL)	2	
12	0023204010	COUNTERSUNK SCREW (M4x10)	12	
13	A200097900	PLATE (HEAD)	1	
14	E000128900	SPACER ASB460E	8	
15	A300276802	PLATE	2	
16	0021704005	SET SCREW (M4x5)	28	
17	0013806012	FLANGE BOLT (M6x12)	16	
18	0023304015	SCREW WASHER (M4x15)	8	
19	A400327202	HOLDER (GUARD)	4	
20	0033206000	SELF LOCK NUT (M6)	8	
21	A300285400	SOCKET ASSY	4	
22	E000038200	CAP (RUBBER)	4	
23	A400321501	STOPPER	14	
24	A300278801	LAMP HOLDER 2	1	
25	A200097703	PLATE (LAMP) 1	2	
26	0043104000	WASHER (M4)	14	
27	0033104000	NUT(M4)	17	
28	A400199500	PACKING (LAMP)	12	
29	0023305015	SCREW & WASHER (M4x12) .....	12.....	REPLACES 0023304012
30	A300278701	LAMP HOLDER 1	1	
31	A400306301	SPRING (LAMP)	4	
32	A400240701	POLE JOINT 2	4	
33	A300269902	MAIN POLE 1	2	
34	A300270002	MAIN POLE 2	2	
35	0023404030	SCREW TRUSS (M4x30)	2	
36	0024304008	SCREW TRUSS (M4x8)	18	
37	0023405008	SCREW TRUSS (M5x8)	16	
38	0023404035	SCREW TRUSS (M4x35)	6	
39	0033204000	SELF LOCK NUT (M4)	6	
40	1400150210	MICRO SWITCH	1	
41	1400150300	MICRO SWITCH COVER	1	
42	1400150410	MICRO SWITCH CAP	1	
43	A300168800	FAN MOTOR ASSY	1	
44	A200100702	PLATE (FAN)	1	
45	A200075900	VESSEL	1	

# ELECTRICAL ASSY. (CONTINUED)

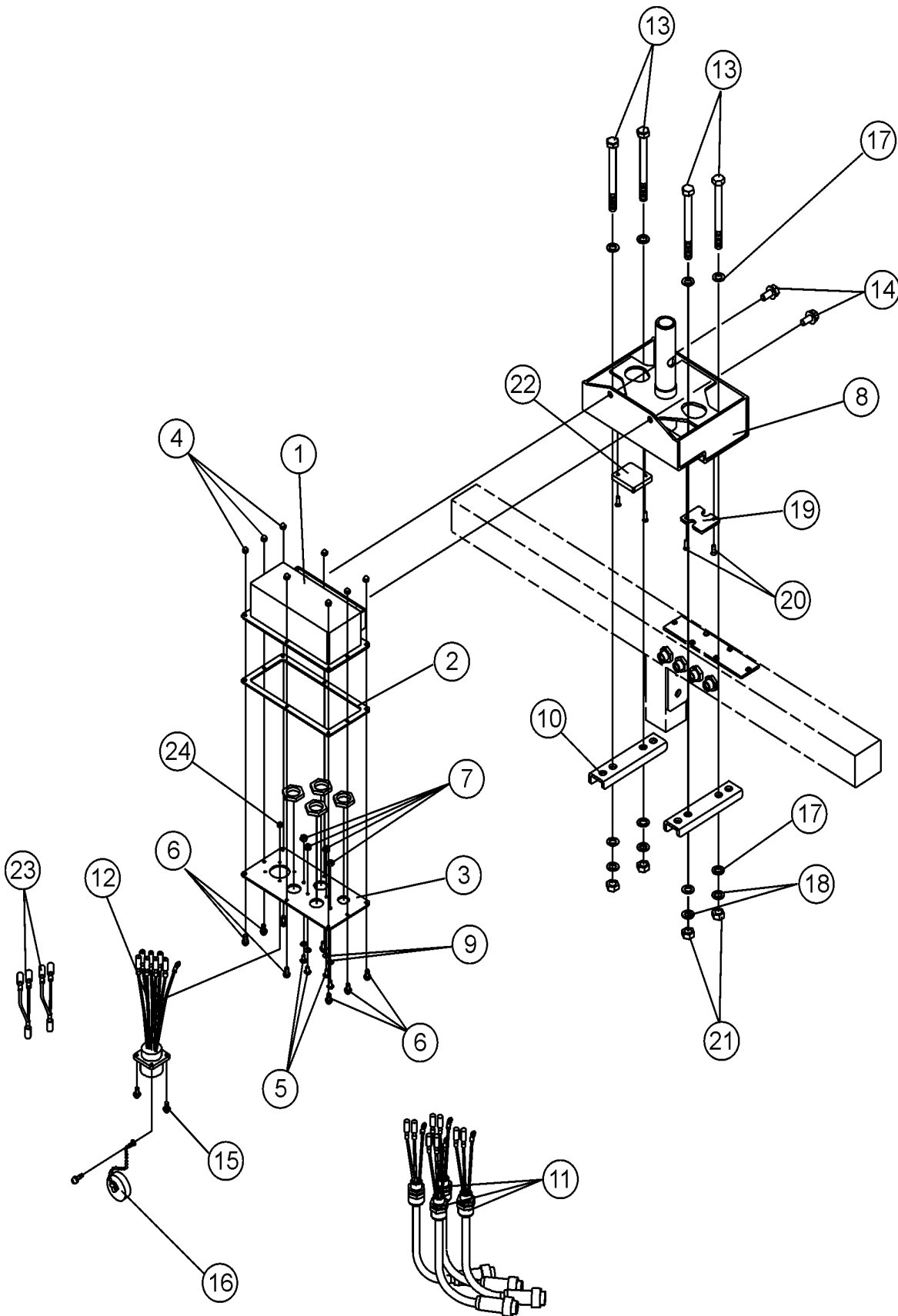




## ELECTRICAL ASSY. (CONTINUED)

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
46	A400240602	POLE JOINT 1	2	
47	A400243501	POLE JOINT 3	2	
48	A300287400	RELAY ASSY	1	
49	A300286700	FAN POWER SOURCE	1	
50	0013112030	BOLT (M12x30)	1	
51	A200100502	FLANGE	1	
52	E000099000	PIN	1	
53	1800001100	SHEET (BOTTOM)	1	
54	A300283300	PLATE (GUARD)	1	
55	A200076103	PLATE (BOTTOM)	1	
56	A400038301	FILTER (200)	1	
57	E000119300	WAVE WASHER	3	
58	A400030700	STOPPER (FILTER)	3	
59	E000010301	SPACER (M4x4)	3	
60	A200018000	PLATE (AIR)	1	
61	A300283700	CABLE (BALLOON) 1 CP	1	
62	A400334400	CABLE (POLE) W CP	2	
63	A400334500	CABLE (POLE) R CP	2	
64	0043204000	SPRING WASHER (M4)	2	

# BRACKET AND J-BOX ASSY.



## BRACKET AND J-BOX ASSY.

<u>NO.</u>	<u>PART NO.</u>	<u>PART NAME</u>	<u>QTY.</u>	<u>REMARKS</u>
1	A200102501	BOX (RELAY)	1	
2	A300282800	RUBBER CAP	1	
3	A300282700	PLATE CAP	1	
4	0033304000	CAP NUT (M4)	8	
5	0024304008	SCREW TRUSS (M4x8)	4	
6	0023305015	SCREW & WASHER (M4x12) .....	8.....	REPLACES 0023304012
7	0033104000	NUT(M4)	4	
8	A100088602	ADAPTER CP	1	
9	E000122700	WASHER	4	
10	A400288001	RETAINER	2	
11	A300215302	CABLE (LAMP) 3 CP	4	
12	A300283800	CABLE (LAMP) 2 CP	1	
13	0013112130	BOLT M12x130	4	
14	0013510025	BOLT & WASHER (M10x25)	2	
15	0023303012	SCREW & WASHER (M3x12)	4	
16	E000128500	CAP	1	
17	0043112000	WASHER (M12)	8	
18	0043212000	SPRING WASHER (M12)	4	
19	A400287902	SPACER 1	1	
20	0023205015	SCREW (M5x15)	4	
21	0033112000	NUT (M12)	4	
22	A400287801	SPACER 2	2	
23	A400334300	CABLE (BOXCOM)	2	
24	0033103000	NUT(M3)	1	

# TERMS AND CONDITIONS OF SALE — PARTS

## PAYMENT TERMS

Terms of payment for parts are net 30 days.

## FREIGHT POLICY

All parts orders will be shipped collect or prepaid with the charges added to the invoice. All shipments are F.O.B. point of origin. Multiquip's responsibility ceases when a signed manifest has been obtained from the carrier, and any claim for shortage or damage must be settled between the consignee and the carrier.

## MINIMUM ORDER

The minimum charge for orders from Multiquip is \$15.00 net. Customers will be asked for instructions regarding handling of orders not meeting this requirement.

## RETURNED GOODS POLICY

Return shipments will be accepted and credit will be allowed, subject to the following provisions:

1. A Returned Material Authorization must be approved by Multiquip prior to shipment.
2. To obtain a Return Material Authorization, a list must be provided to Multiquip Parts Sales that defines item numbers, quantities, and descriptions of the items to be returned.
  - a. The parts numbers and descriptions must match the current parts price list.
  - b. The list must be typed or computer generated.
  - c. The list must state the reason(s) for the return.
  - d. The list must reference the sales order(s) or invoice(s) under which the items were originally purchased.
  - e. The list must include the name and phone number of the person requesting the RMA.
3. A copy of the Return Material Authorization must accompany the return shipment.
4. Freight is at the sender's expense. All parts must be returned freight prepaid to Multiquip's designated receiving point.

5. Parts must be in new and resalable condition, in the original Multiquip package (if any), and with Multiquip part numbers clearly marked.
6. The following items are not returnable:
  - a. Obsolete parts. (If an item is in the price book and shows as being replaced by another item, it is obsolete.)
  - b. Any parts with a limited shelf life (such as gaskets, seals, "O" rings, and other rubber parts) that were purchased more than six months prior to the return date.
  - c. Any line item with an extended dealer net price of less than \$5.00.
  - d. Special order items.
  - e. Electrical components.
  - f. Paint, chemicals, and lubricants.
  - g. Decals and paper products.
  - h. Items purchased in kits.
7. The sender will be notified of any material received that is not acceptable.
8. Such material will be held for five working days from notification, pending instructions. If a reply is not received within five days, the material will be returned to the sender at his expense.
9. Credit on returned parts will be issued at dealer net price at time of the original purchase, less a 15% restocking charge.
10. In cases where an item is accepted, for which the original purchase document can not be determined, the price will be based on the list price that was effective twelve months prior to the RMA date.
11. Credit issued will be applied to future purchases only.

## PRICING AND REBATES

Prices are subject to change without prior notice. Price changes are effective on a specific date and all orders received on or after that date will be billed at the revised price. Rebates for price declines and added charges for price increases will not be made for stock on hand at the time of any price change.

Multiquip reserves the right to quote and sell direct to Government agencies, and to Original Equipment Manufacturer accounts who use our products as integral parts of their own products.

## SPECIAL EXPEDITING SERVICE

A \$35.00 surcharge will be added to the invoice for special handling including bus shipments, insured parcel post or in cases where Multiquip must personally deliver the parts to the carrier.

## LIMITATIONS OF SELLER'S LIABILITY

Multiquip shall not be liable hereunder for damages in excess of the purchase price of the item with respect to which damages are claimed, and in no event shall Multiquip be liable for loss of profit or good will or for any other special, consequential or incidental damages.

## LIMITATION OF WARRANTIES

No warranties, express or implied, are made in connection with the sale of parts or trade accessories nor as to any engine not manufactured by Multiquip. Such warranties made in connection with the sale of new, complete units are made exclusively by a statement of warranty packaged with such units, and Multiquip neither assumes nor authorizes any person to assume for it any other obligation or liability whatever in connection with the sale of its products. Apart from such written statement of warranty, there are no warranties, express, implied or statutory, which extend beyond the description of the products on the face hereof.

Effective: February 22, 2006

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# OPERATION AND PARTS MANUAL

## HERE'S HOW TO GET HELP

PLEASE HAVE THE MODEL AND SERIAL  
NUMBER ON-HAND WHEN CALLING

### **UNITED STATES**

#### ***Multiquip Corporate Office***

18910 Wilmington Ave.  
Carson, CA 90746  
Contact: mq@multiquip.com

Tel. (800) 421-1244  
Fax (310) 537-3927

#### ***Service Department***

800-421-1244  
310-537-3700

Fax: 310-537-4259

#### ***Technical Assistance***

800-478-1244

Fax: 310-943-2238

#### ***MQ Parts Department***

800-427-1244  
310-537-3700

Fax: 800-672-7877  
Fax: 310-637-3284

#### ***Warranty Department***

800-421-1244  
310-537-3700

Fax: 310-943-2249

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### **CANADA**

#### ***Multiquip***

4110 Industriel Boul.  
Laval, Quebec, Canada H7L 6V3  
Contact: jmartin@multiquip.com

Tel: (450) 625-2244  
Tel: (877) 963-4411  
Fax: (450) 625-8664

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### **UNITED KINGDOM**

#### ***Multiquip (UK) Limited Head Office***

Unit 2, Northpoint Industrial Estate, Tel: 0161 339 2223  
Globe Lane, Fax: 0161 339 3226  
Dukinfield, Cheshire SK16 4UJ  
Contact: sales@multiquip.co.uk

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This manual MUST accompany the equipment at all times. This manual is considered a permanent part of the equipment and should remain with the unit if resold.

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